TOPPOWER

# TPC/LR-150-XS series

**DESCRIPTION:** **150W Wide input AC/DC switching power supply**

The rated output power of TPC/LR-150-XS series is 150W，input voltage range：90-264VAC, output voltage : 12V,15V,24V,36V,48V,High reliability, precision,effificency , ultra-small size, no external heat sink required, stable output voltage and etc, with short circuit, over-load,over-voltage protection, Widely used in telecommunications, industrial control, instrument, data acquisition, signal control , New Energy, Security,and other electronic systems.

## FEATURES

| | | |
|---|---|---|
| Universal AC input ： 90VAC-264VAC | 100% full load burn-in test | short circuit, over-load,over-voltage protection |
| Operating temperature：-30℃~70℃ | RoHS complaint | Low standby power consumption<0.5W |
| All using 105℃ long-life electrolytic capacitors | High reliability,effificency | Full compliance with safety regulation,EMC design |

## SELECTION GUIDE

| Part Number | Input | | Output | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Volatge（VAC） | | Voltage（VDC） | Pre-set voltage @25℃(V) | Rated current（A） | Current range(A) | Rated power(W) | Efficiency @25℃,（Typ） % |
| | Rated | Range values | | | | | | |
| TPC/LR-150-12S | 220 | 90-264 | 12 | 12.00-12.10 | 12.5 | 0-12.5 | 150 | 85 |
| TPC/LR-150-15S | 220 | 90-264 | 15 | 15.00-15.10 | 10 | 0-10 | 150 | 87 |
| TPC/LR-150-24S | 220 | 90-264 | 24 | 24.00-24.10 | 6.25 | 0-6.25 | 150 | 89 |
| TPC/LR-150-36S | 220 | 90-264 | 36 | 36.00-36.10 | 4.17 | 0-4.17 | 150 | 89 |
| TPC/LR-150-48S | 220 | 90-264 | 48 | 48.00-48.10 | 3.125 | 0-3.125 | 150 | 90 |

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

## OUTPUT CHARACTERISTICS

| Conditions | Conditions | Parameter |
|---|---|---|
| Ripple and noise,Ta is ambient ， @25℃ | 12V 15V output voltage | ≤150mVp-p |
| | 24V，36V,48V output voltage | ≤200mVp-p |
| Output adjustment range @25℃ | 12V output voltage | 10.8V-13.2V |
| | 15V output voltage | 13.5V~16.5V |
| | 24V output voltage | 21.6V-26.4V |
| | 36V output voltage | 32.4V~39.6V |
| | 48V output voltage | 43.2V-52.8V |
| Voltage regulation accuracy@-30~70℃ | ±1% | |
| Line regulation@-30~70℃ | ±0.5% | |
| Load regulation@-30~70℃ | ±0.5% | |
| Temp. coefficient@-25~70℃ | ±0.03%/℃ | |
| Set-up time@25℃ | ≤600mS / 30mS ( 230Vac/115Vac input, full load ) | |
| Hold-up time@25℃ | ≥20mS(230Vac input, Full load) | |
| Overshoot&Undershoot@-30~70℃ | <5.0% | |

## INPUT CHARACTERISTICS

| Conditions | Parameter |
|---|---|
| Input voltage range | 90Vac~264Vac 120-370VDC |
| Max. input voltage | 300Vac input,no damage，dwell time 5S |
| Rated input voltage range | 100Vac~240Vac 120-370VDC |
| Frequency Range | 47Hz~63Hz |

## INPUT CHARACTERISTICS

| | |
|---|---|
| Set-up voltage@-30~70℃ | 90Vac（refer to the derating curve） |
| Input current@25℃ | ≤3A@115Vac / ≤1.7A@230Vac |
| Inrush current @25℃ | ≤60A@220Vac Cold start |
| Standby power@25℃ | ＜0.5W |

## PROTECTION @-30～70℃

| Conditions | Parameter |
|---|---|
| Over-power | 120%~180% of rated power, Hiccup mode, auto recovery |
| Over-voltage | 120%~150% of rated output voltage, constant voltage, auto recovery |
| Over-load | 120%~180% of rated current, Hiccup mode, auto recovery |
| Output short circuit protection | Long-term mode, Auto recovery |

## ENVIRONMENT CHARACTERISTICS

| Conditions | Parameter |
|---|---|
| Operating amb. Temp.&Humi. | -30℃~70℃; 20%~90%RH No condensing （refer to the derating curve） |
| Storage Temp. & Humi. | -40℃~85℃; 10%~95%RH No condensing |
| Vibration | 10 ~ 500Hz, 5G 10min./1cycle, period for60min. each along X,Y, Z axes |
| Pulse | 20G/11mS pulse ,3 times at each X,Y,Z axes |
| Altitude | 5000m |

## SAFETY&EMC STANDARDS @25℃

| Conditions | Parameter |
|---|---|
| Safety Standards | EN60950-1 |
| Withstand Voltage | I/P-O/P:3.0KVac/10mA; I/P-FG:1.5KVac/10mA; O/P-FG:0.5KVdc/10mA test time:1min. |
| Grounding test | Test condition：40A / 2min.；Grounding resistance：＜0.1 ohms. |
| Leakage Current | I/P-Grounding≤0.75mA； I/P-O/P ≤0.25mA 240Vac input 63Hz |
| Isolation resistance | I/P-O/P: 100M ohms; I/P-FG : 100M ohms; O/P-FG : 100M ohms |
| EMC emission | EN55032 Class B/FCC Part15 Class B |
| EMC immunity | EN61000-4-2,3,4,5,6,8,11 |

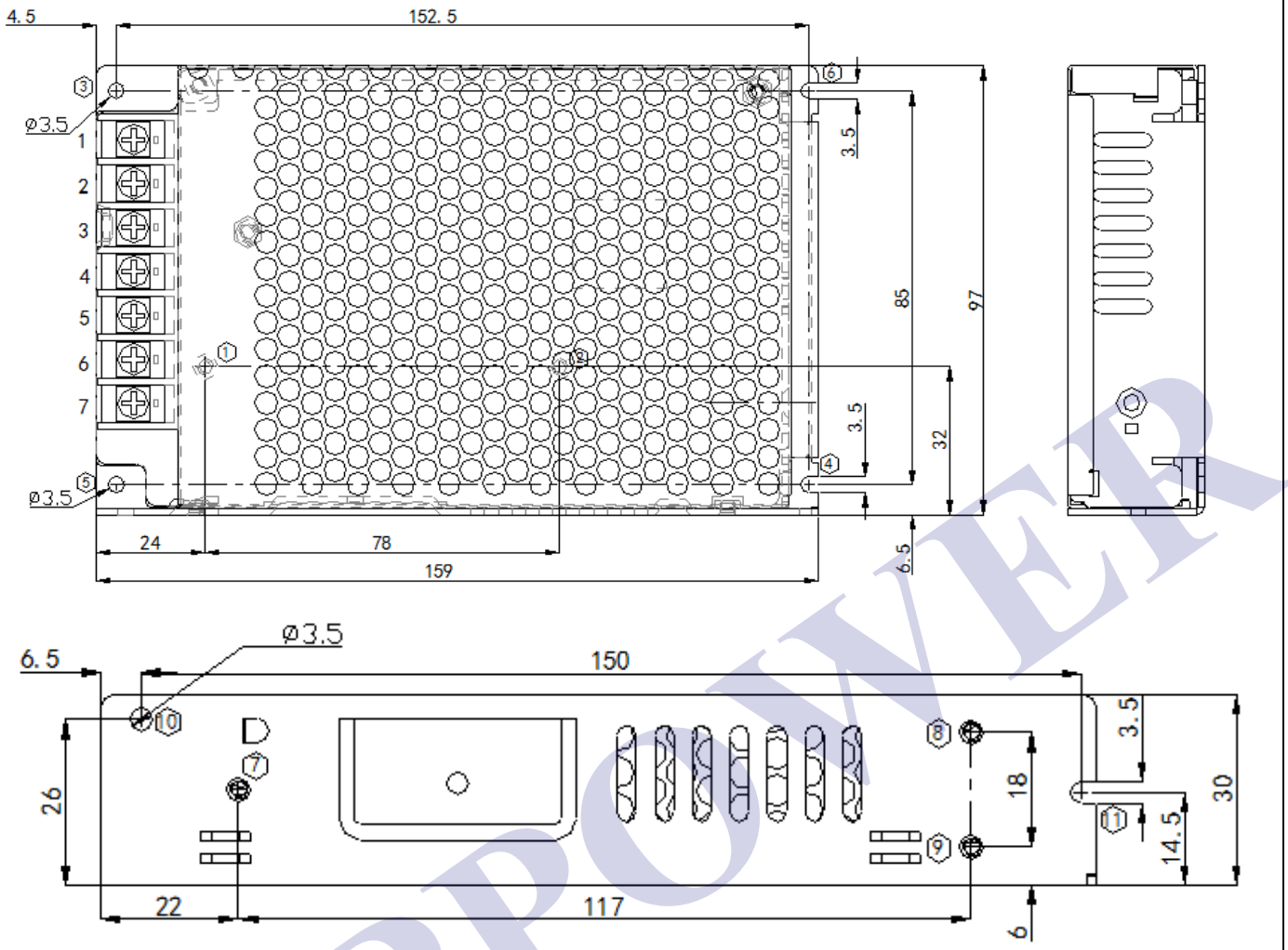
## OTHERS

| Conditions | Parameter |
|---|---|
| Cooling method | Cooling by free air flow |
| Dimension (L*W*H) | 159*97*30mm |
| Net Weight | 0.38kg |

## RELIABIILITY CHARACTERISTICS

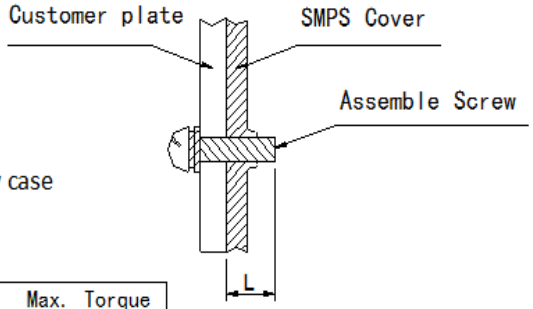
| Conditions | Parameter |
|---|---|
| MTBF | 200,000Hrs AT 25℃, MIL-217 Method 2 Components Stress Method |

## MECHANICAL DIMENSIONS




| Mounting Position | Mounting Type | Mounting Position No. | Screw Type | Lmax | Mounting Torque(max) |
|---|---|---|---|---|---|
| Bottom Mounting | Fixing by screws | ①—② | M3 | 4.0mm | 6.5Kgf.cm (max) |
| | | ③—④ | M3 | 4.0mm | |
| | | ⑤—⑥ | M3 | 4.0mm | |
| Side Mounting | Fixing by screws | ⑦—⑧ | M3 | 4.0mm | 6.5Kgf.cm (max) |
| | | ⑨—⑩ | M3 | 4.0mm | |

1, Dimensional Unit: mm
2, Unmarked Tolerance is GB/T 1804-m
3, Choose the best installation method.




Remarks: 1. For safety purpose, the length of screw inside the power supply case shall comply with the above table (refer the right drawing)

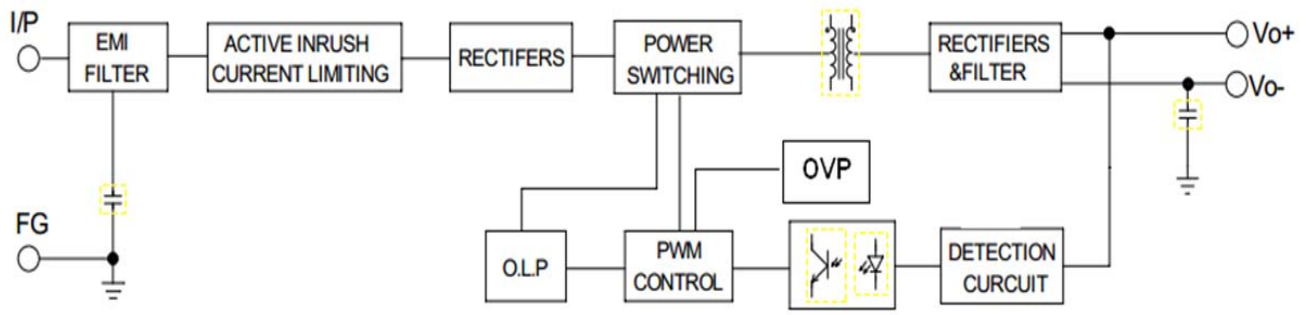
1, Instruction of the AC Input Connectors

| Part number | Function | Connector | Requirement for Cables | Max. Torque |
|---|---|---|---|---|
| 1 | AC(L) | 95 Terminal Block | 22-12AWG | 12Kgf.cm (max) |
| 2 | AC(N) | | | |
| 3 | ⏚ | | | |

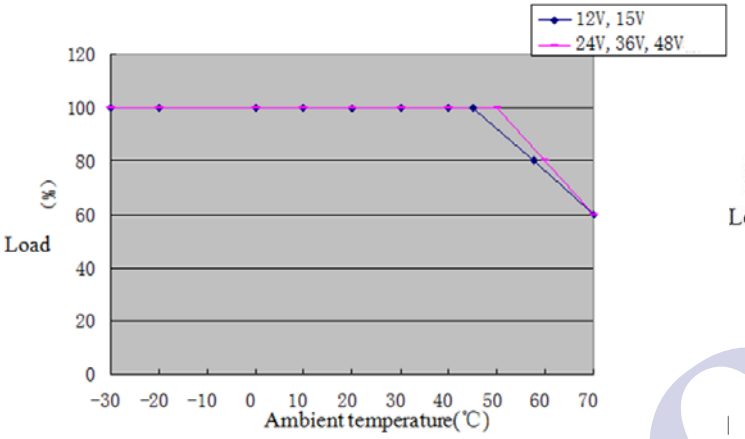
2, Instruction of the DC Output Connectors

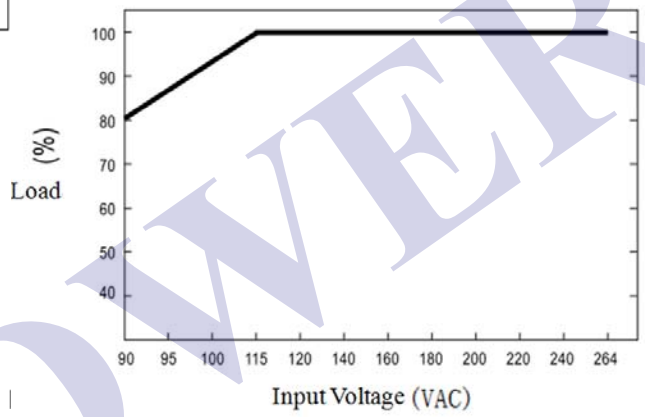
| Part number | Function | Connector | Requirement for Cables | Max. Torque |
|---|---|---|---|---|
| 4/5 | V- | 95 Terminal Block | 22-12AWG | 12Kgf.cm (max) |
| 6/7 | V+ | | | |

## BLOCK DIAGRAM




## DERATING CURVE




## MODEL SELECTION